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| WORLD METEOROLOGICAL ORGANIZATION  COMMISSION FOR BASIC SYSTEMS  -----------------------------  FOURTH MEETING OF  INTER-PROGRAMME EXPERT TEAM ON DATA REPRESENTATION MAINTENANCE AND MONITORING  GENEVA, SWITZERLAND, 30 MAY - 3 JUNE 2016 |  | IPET-DRMM-IV √ Doc 7.2(1)  (27. 5. 2016)  -------------------------  ITEM 7.2  ENGLISH ONLY |

MIGRATION TO TABLE DRIVEN CODE FORMS (TDCF)

**Status of migration in RA I**

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**Summary and Purpose of Document**

The document outlines the efforts made by members of RA I towards migration to Table Driven Code Forms. It also describes the migration status and challenges encountered in the region.

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**ACTION PROPOSED**

The meeting is requested to take note of the listed challenges and suggest some solutions.

**ANNEXES:**

1. Summary of survey on the migration status in RA I for SYNOP and TEMP based on monitoring at Nairobi RTH.
2. Questionnaire on MTDCF status and the country requirements for full migration – Example from The Gambia

**DISCUSSIONS**

Despite the challenges experienced by many NMHS in RA I some progress in TDCF migration was observed in the last 12 months. The major challenges are lack of encoding software and connectivity to RTH that can manage transmission of BUFR reports. There are also few countries that are yet to receive any TDCF training.

A survey was carried out at Nairobi RTH in April-May 2016 on the status of reports transmitted by different countries in RA 1. The results obtained showed that out of the 53 countries monitored SYNOP reports in BUFR were transmitted by 13 countries while TEMP reports in BUFR were transmitted by 3 countries. CLIMAT reports are mainly being transmitted in TAC. More details on this survey are listed in the ANNEX 1.

An additional survey was done by sending questionnaire (see example in ANNEX 2) to all TDCF focal points in RA I requesting them to indicate the difficulties in their migration process. Nine responses were received. Three countries namely Tanzania, Algeria and Kenya reported that they are able to manage their migration process without external assistance. Six countries listed what they lacked in their TDCF migration. The requirements are as follows:

1. **Botswana**  - Encoding software required
2. **Zimbabwe** – Further training on TDCF required
3. **Cameroon**  - TDCF training and Software required
4. **The Gambia** - TDCF training and Software required
5. **Burundi** - GTS connectivity required and TDCF software
6. **Somalia** – Data transmission infrastructure is not yet in place

Efforts are being made in contacting those that did not respond to the questionnaire.

Algeria reported to have achieved full. Tanzania reported that full migration will be achieved by August 2016. Kenya is transmitting SYNOP and TEMP in BUFR. Encoding of CLIMAT reports in BUFR is in the testing phase and transmission is expected later in the year.

Parallel transmission of BUFR and TAC is continuing in those NMHS that have migrated to TDCF. Encoding of the messages to TDCF is the biggest challenge. For the forecasting purposes, most of the NMHS in RA I visualizes the reports from GTS through systems such as Messir, Synergy, Puma etc hence requirement for TDCF decoders is not as critical as that of encoders.

**PROPOSAL**

Although migration to TDCF is on course in RA I the level of Migration is still very low. Migration of SYNOP reports in the region is at 25% and TEMP at 6%. Challenges that were observed through the survey on the migration requirements were lack of TDCF awareness and training, lack of encoding software, difficulties in GTS connectivity and lack of TDCF focal points. It is therefore proposed that these challenged be addressed as follows:

1. **TDCF awareness and training**

Cameroon and The Gambia reported not to have had any training on TDCF. The meeting is requested to suggest how these two countries can be urgently assisted with TDCF training and encoding software. Although Somalia is yet to install data transmission infrastructure it can be assisted with sensitisation on TDCF requirements.

1. **Encoding software**

This is the biggest challenge in most countries. It is proposed that a list of the WMO recommended TDCF encoding software be made available to PRs and TDCF focal points in RA I. They may be requested to indicate where funding is required.

1. **GTS connectivity**

Burundi reported to have no GTS connectivity on top of not having encoding software. It is proposed that Nairobi RTH be requested to look into what is required to establish the link between Nairobi and Bujumbura.

1. **TDCF focal points**

It was established that a number of the TDCF listed focal points no longer serve in the met services or they may have been assigned different roles. As a result less than 10 countries responded to questionnaire sent to 50 countries. It is therefore proposed that the list of the TDCF focal points in RA I be revised the soonest.

**ANNEX 1:** Summary of survey on the migration status in RA I for SYNOP, TEMP and CLIMAT based on Nairobi RTH transmission monitoring

| **No** | **COUNTRY** | **CCCC** | **SYNOP** | | **TEMP** | | **PILOT** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **TAC** | **BUFR** | **TAC** | **BUFR** | **TAC** | **BUFR** |
|  | Algeria AL | DAMM | √ | √ | √ | √ |  |  |
|  | Burkina Faso HV | DFFD | √ |  | √ |  | √ |  |
|  | Ghana GH | DGAA | √ |  |  |  |  |  |
|  | Cote d'Ivoire IV | DIAP | √ |  | √ |  | √ |  |
|  | Benin BJ | DBBB | √ |  | √ |  | √ |  |
|  | Nigeria NI | DNKN | √ |  | √ |  |  |  |
|  | Niger NR | DRRN | √ |  | √ |  | √ |  |
|  | Tunisia TS | DTTA | √ |  | √ |  | √ |  |
|  | Togo TG | DXXX | √ |  |  |  |  |  |
|  | South Africa ZA | FAPR | √ |  | √ |  | √ |  |
|  | Botswana BC | FBSK | √ |  | √ |  | √ |  |
|  | Congo CG | FCBB | √ | √ | √ |  | √ |  |
|  | Swaziland SV | FDMS | √ |  |  |  |  |  |
|  | Central African Republic CE | FEFF | √ | √ | √ |  |  |  |
|  | Guinea GQ | FGSL |  | √ |  |  |  |  |
|  | Mauritius MA | FIMP | √ | √ | √ |  | √ |  |
|  | Cameroon CM | FKKD | √ |  | √ |  | √ |  |
|  | Zambia ZB | FLLS |  |  |  |  |  |  |
|  | Comoros IC | FMCH | √ |  |  |  |  |  |
|  | Reunion RE | FMEE | √ | √ | √ | √ |  |  |
|  | Madagascar MG | FMMI | √ |  | √ |  | √ |  |
|  | Angola AN | FNLU | √ |  |  |  |  |  |
|  | Gabon GO | FOOL | √ | √ | √ |  | √ |  |
|  | Mozambique MZ | FQMA | √ |  |  |  |  |  |
|  | Seychelles SC | FSIA | √ |  | √ |  |  |  |
|  | Chad CD | FTTJ | √ | √ | √ |  | √ |  |
|  | Zimbabwe ZW | FVHA | √ |  | √ |  | √ |  |
|  | Malawi MW | FWCL | √ |  | √ |  |  |  |
|  | Lesotho LS | FXMM | √ |  |  |  |  |  |
|  | Namibia NM | FYWW | √ |  | √ |  | √ |  |
|  | Congo ZR | FZAA | √ |  | √ |  | √ |  |
|  | Mali MI | GABS | √ |  | √ |  | √ |  |
|  | Gambia GB | GBYD | √ |  |  |  |  |  |
|  | Sierra Leone SL | GFLL |  |  |  |  |  |  |
|  | Guinea-Bissau GW | GGOV | √ |  |  |  |  |  |
|  | Liberia LI | GLRB |  |  |  |  |  |  |
|  | Morocco MC | GMMC | √ |  | √ |  |  |  |
|  | Senegal SG | GOOY | √ | √ | √ |  | √ |  |
|  | Mauritania MT | GQNN | √ |  | √ |  | √ |  |
|  | Guinea GN | GUCY | √ |  |  |  |  |  |
|  | Ethiopia ET | HAAB | √ | √ | √ |  | √ |  |
|  | Burundi BI | HBBA | √ |  |  |  |  |  |
|  | Somalia SI | HCMM |  |  |  |  |  |  |
|  | Djibouti DJ | HDAM | √ |  |  |  |  |  |
|  | Egypt EG | HECA | √ |  | √ |  |  |  |
|  | Eritrea | HHAS |  |  |  |  |  |  |
|  | Kenya KN | HKNC | √ | √ | √ | √ |  |  |
|  | Libya LY | HLLT | √ |  | √ |  |  |  |
|  | Rwanda RW | HRYR | √ |  |  |  |  |  |
|  | South Sudan SS | HSSJ | √ |  |  |  |  |  |
|  | Sudan SU | HSSS | √ |  |  |  |  |  |
|  | Tanzania TN | HTDA | √ | √ |  |  |  |  |
|  | Uganda UG | HUEN | √ | √ | √ |  |  |  |
| Total | |  | 47 | **13** |  | **3** | 20 |  |

**ANNEX 1:** Questionnaire on the requirements for migration to TDCF

Example from **The Gambia**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Details**  ***Fill the unshaded areas*** | | | | | | | | |
| **Name of the Country:** | | | THE GAMBIA | | | | | |
| **National TDCF**  **Focal Point** | | Name:  GEORGE GAYE | | | Email: georgegaye@yahoo.com | | | |
| **Current Migration Status** | | | | | | | | |
| ***Mark (X) appropriately*** | | | | | | | **YES** | **NO** |
|  | Has any training been done on TDCF operations? | | | | | |  |  |
|  | Has encoding of messages in TDCF been started? | | | | | |  |  |
|  | Is there any TDCF encoded software available? | | | | | |  |  |
|  | Has transmission of messages to GTS in TDCF been started? | | | | | |  |  |
|  | Is there any assistance required to complete the migration to TDCF? | | | | | |  |  |
| If any assistance is required give details:  TRAINING TO CODE AND ENCODE INCLUDING THE RELEVANT SOFTWARE | | | | | | | | |
| Give any other information found necessary:  DUE TO ATTRITION IT WILL BE APPROPRIATE TO TRAIN AT LEAST TWO PERSONNEL FOR CONTINUITY. | | | | | | | | |
| **Status of messages being sent to GTS (Mark Yes or No)** | | | | | | | | |
|  | | | | **TDCF** | | **TAC** | | |
| **SYNOP** | | | | NO | | YES | | |
| **CLIMAT** | | | | NO | | YES | | |
| **TEMP** | | | | NO | | NO | | |
| **PILOT** | | | | NO | | NO | | |